

AMENDMENTS TO THE CLAIMS

Please find herein below a complete listing of claims that will replace all prior versions, and listings, of claims in the application:

Listing of claims:

1. (currently amended) A ~~network element for delivering~~ gateway for assisting in delivery of a communications service between first ring and a second ~~survivable ring~~[[s]]; comprising:
 - ~~— a switch for controllably establishing connections between the first and second rings; and~~
 - ~~— a controller for controlling the switch and being operable to monitor the status of an other network element and establish a new inter-ring connection for delivery of the service upon failure of the other network element.~~
 - a switching entity operative to provide controllable consumption of inter-ring bandwidth between the first and second rings;
 - a control entity operative to monitor a status of a remote gateway which delivers the communications service between the first and second rings;
 - the control entity being responsive to observation of a non-failure status of the remote gateway to maintain non-consumption of inter-ring bandwidth by the switching entity;
 - the control entity being responsive to occurrence of a failure of the remote gateway to cause consumption of inter-ring bandwidth by the switching entity for delivery of the communications service between the first and second rings.
2. (cancelled)

3. (new) The gateway defined in claim 1, wherein the first and second rings are survivable.
4. (new) The gateway defined in claim 3, wherein at least one of the first ring and the second ring is a two-fiber bidirectional line-switched ring.
5. (new) The gateway defined in claim 3, wherein at least one of the first ring and the second ring is a four-fiber bidirectional line-switched ring.
6. (new) The gateway defined in claim 3, wherein the first ring is a two-fiber bidirectional line-switched ring and the second ring is a four-fiber bidirectional line-switched ring.
7. (new) The gateway defined in claim 3, wherein the control entity causing consumption of inter-ring bandwidth by the switching entity comprises the control entity establishing a new inter-ring connection between the first and second rings.
8. (new) The gateway defined in claim 7,
 - wherein adjacent network elements in the first ring are connected by a first working path and by a first protection path;
 - wherein adjacent network elements in the second ring are connected by a second working path and by a second protection path;
 - wherein when, prior to failure, the remote gateway delivers the communications service between the working path of the first ring and the working path of the second ring, the new inter-ring connection connects the protection path of the first ring to the protection path of the second ring.
9. (new) The gateway defined in claim 7,

- wherein adjacent network elements in the first ring are connected by a first working path and by a first protection path;
- wherein adjacent network elements in the second ring are connected by a second working path and by a second protection path;
- wherein when, prior to failure, the remote gateway delivers the communications service between the working path of the first ring and the working path of the second ring, the new inter-ring connection connects the working path of the first ring to the protection path of the second ring.

10.(new) The gateway according to claim 7,

- the second working path defining an inter-gateway working segment between said gateway and the remote gateway;
- wherein when, prior to failure, the remote gateway delivers the communications service between the first working path and the second inter-gateway working segment, the new inter-ring connection is established between the first protection path and the second working path.

11.(new) The gateway according to claim 7,

- the first working path defining an inter-gateway working segment between said gateway and the remote gateway;
- wherein when, prior to failure, the remote gateway delivers the communications service between the inter-gateway working segment and the second working path, the new inter-ring connection is established between the first working path and the second protection path.

12.(new) The gateway defined in claim 1, the control entity being operative to exchange control information with network elements in the first and second rings, including the remote gateway.

- 13.(new) The gateway defined in claim **12**, wherein the control information comprises at least the status of the remote gateway.
- 14.(new) The gateway defined in claim **12**, further comprising a memory element accessible to the control entity, the memory element storing program code executed by the control entity.
- 15.(new) The gateway defined in claim **14**, wherein the control information comprises at least said program code for storage in said memory element.
- 16.(new) The gateway defined in claim **1**, wherein the first and second rings are fiber optic rings comprising fiber optic segments and wherein the switching entity provides switching amongst a set of ports connected to a total of at least two fiber optic segments of the first ring and at least two fiber optic segments of the second ring.
- 17.(new) The gateway defined in claim **16**, wherein the switching entity is an optical switch.
- 18.(new) The gateway defined in claim **16**, wherein the switching entity is electronic switch, the gateway further comprising opto-electronic conversion circuitry connected to the switching entity, the opto-electronic conversion circuitry operative to convert incoming optical signals into electronic signals fed to the ports of the switching entity and to convert the signals exiting the ports of the switching entity into optical signals for transmission across the fiber optic segments connected to the ports of the switching entity.
- 19.(new) The gateway defined in claim **16**, wherein the fiber optic segments carry wavelength-division multiplexed optical signals.

20.(new) A gateway for assisting in delivery of a communications service between a first ring and a second ring, comprising:

- switching means for providing controllable consumption of inter-ring bandwidth between the first and second rings;
- control means for monitoring a status of a remote gateway which delivers the communications service between the first and second rings;
- said control means being responsive to observation of a non-failure status of the remote gateway to maintain non-consumption of inter-ring bandwidth by the switching entity;
- said control means being responsive to occurrence of a failure of the remote gateway to cause consumption of inter-ring bandwidth by the switching entity for delivery of the communications service between the first and second rings.

21.(new) A method controlling a switching entity in a gateway, the switching entity being operative to provide controllable consumption of inter-ring bandwidth between first and second rings, the method comprising:

- monitoring a status of a remote gateway which delivers a communications service between the first and second rings;
- responsive to observation of a non-failure status of the remote gateway, maintaining non-consumption of inter-ring bandwidth by the switching entity;
- responsive to occurrence of a failure of the remote gateway, causing the switching entity to consume inter-ring bandwidth for delivery of the communications service between the first and second rings.

22.(new) A computer-readable storage medium containing software which, when running on a processor, executes the method of claim 21.

23.(new) A computer-readable storage medium containing a program element for execution by a computing device to implement a controller for

controlling a switching entity in a gateway, the switching entity being operative to provide controllable consumption of inter-ring bandwidth between first and second rings, the program element including:

- program code means for monitoring a status of a remote gateway which delivers a communications service between the first and second rings;
- program code means for maintaining non-consumption of inter-ring bandwidth by the switching entity in response to observation of a non-failure status of the remote gateway;
- program code means for causing the switching entity to consume inter-ring bandwidth for delivery of the communications service between the first and second rings in response to occurrence of a failure of the remote gateway.